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Bibliography

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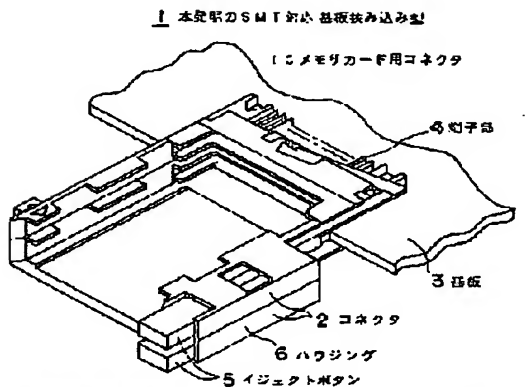
Summary

(57) [Abstract]

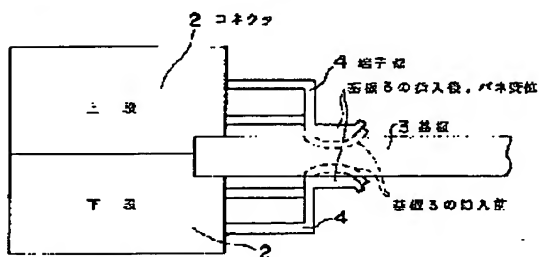
[Objects of the Invention] since a terminal area is short and can be managed with the connector for PC cards which JEIDA (Japan Electronic Industry Development Association) in Japan and PCMCIA (PC Memory Card International Association) in the U.S. talked, standardized, and was based on the specification -- press working of sheet metal -- easy -- a current loss -- few -- solder mounting -- easy -- mounting height -- low -- offer of the **** connector 1 for SMT correspondence substrate clip lump type IC memory card

[Elements of the Invention] The connector 1 for SMT correspondence substrate clip lump type IC memory card characterized by forming the terminal area 4 which puts by the connector 2 of the two-step pile (one is also good) which carries out vertical opposite of the substrate 3, and has spring elasticity in the aforementioned vertical connector 2, and performing soldering mounting to a substrate 3 by the aforementioned terminal area 4.

[Translation done.]



(イ) 本発明の実施例で、基板3を上下のコネクタ2で挟み込んだSMT対応基板挟み込み型ICメモリカード用コネクタ1の斜視図。



(ロ) その断面斜視図。

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CLAIMS

[Claim(s)]

[Claim 1] The connector for SMT correspondence substrate clip lump type IC memory card characterized by preparing the terminal area which puts by the two-step pile which carries out vertical opposite of the substrate, or the unified connector, and has spring elasticity in the aforementioned vertical connector, and performing soldering mounting to a substrate by the aforementioned terminal area.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] JEIDA (Japan Electronic Industry Development Association) in Japan and PCMCIA (PC Memory Card International Association) in the U.S. discuss this invention, and it is standardized, is a connector for PC cards based on the specification, and relates to the connector 1 for SMT correspondence substrate clip lump type IC memory card.

[0002]

[Description of the Prior Art] In recent years, electronic equipment, such as a personal computer, a circumference terminal equipment, and various OA equipment, has remarkable miniaturization and lightweight-izing, and the PC card has been praised as information media which were excellent in portability instead of the floppy disk or the hard disk. Introduction and the drawing 3 (b) are the first conventional example, and are the cross section of the connector for IC memory card carried on the conventional substrate which has arranged terminal area 4 of connector 2' ' in back 2 train on substrate 3'. After soldering of the lower berth and an upper case finished so that clearly from drawing, there was a fault that soldering of a lower-berth side terminal area was uncorrectable. Next, the drawing 3 (b) is the second conventional example, and is the cross section of the connector for IC memory card carried on the conventional substrate which has arranged terminal area 4 of connector 2' ' in front 1 train and back 1 train on substrate 3'. In this case, electric resistance not only becomes large, but the length of the terminal of a lower-berth side terminal area became very long, and there was a fault that a bending process was complicated, to feeble current. And since the conventional thing was a method which carries out the stage pile of the connector of a top and the lower berth, and carries it on a substrate, it also had the fault that mounting height will surely become high.

[0003] Since a terminal area is short and ends as a result of inquiring wholeheartedly, in order to solve these faults, this invention is easy press working of sheet metal. It is what was made for the purpose of offer of the **** connector 1 for SMT correspondence substrate clip lump type IC memory card. a current loss — few — solder mounting — easy — mounting height — low — The terminal area 4 which puts the place made into the summary by the connector 2 of the two-step pile (one is also good) which carries out vertical opposite of the substrate 3, and has spring elasticity in the aforementioned vertical connector 2 is formed. It is the connector 1 for SMT correspondence substrate clip lump type IC memory card characterized by performing soldering mounting to a substrate 3 by the aforementioned terminal area 4.

[0004]

[Example] Hereafter, the example of the connector 1 for SMT correspondence substrate clip lump type IC memory card of this invention is explained in detail with reference to an accompanying drawing. The drawing 1 (b) is the example of this invention, it is the perspective diagram of the connector 1 for SMT correspondence substrate clip lump type IC memory card which put the substrate 3 by the up-and-down connector 2, and the drawing 1 (b) is the cross-section explanatory drawing. It is the connector 1 for SMT correspondence substrate clip lump type IC memory card characterized by forming the terminal area 4 which puts by the connector 2 of the two-step pile (one is also good) which carries out vertical opposite of the substrate 3, and has spring elasticity in the aforementioned vertical connector 2, and performing soldering mounting to a substrate 3 by the aforementioned terminal area 4 so that clearly from drawing. The ground of the contact surface of the terminal area 4 of this invention was carried out to the copper alloy with nickel, what gold-plated was used, and usual thermoplastics was used for housing 6. What is necessary is just to carry out by the usual methods, such as far-infrared rays, infrared rays, and vapor, as the concrete method of soldering mounting. Drawing 2 is the example of this invention and is the perspective diagram before inserting the IC memory card 7 which becomes a connector 2 from three types. If the example of concrete use is given, there are three types of specification by IC memory card of 68 pins, for example, it is the card type III to an upper case. When it is used, the lower berth is also made into the same direction and should just use the card type 1 or the card type II. As a result of comparing mounting height by the case of connector 1' for IC memory card carried on the connector 1 for SMT correspondence substrate clip lump type IC memory card of this invention, and the conventional substrate for such structure, compared with the conventional thing, about 1/becomes possible [making it low] 2.

[0005] Although the case where do not restrict to this although it has explained taking the case of [representation] the connector 1 for SMT correspondence substrate clip lump type IC memory card, and the two-step pile of the connector 2 is carried out for example, is illustrated in the example of this invention, you may

make it the connector been [nothing] and unified in a two-step pile. Moreover, although the case where a terminal area 4 is also made perpendicularly or right-angled to a substrate is shown, what was formed not only this but in the shape of a curve may be used. Thus, not only the example raised above but broad application is possible, and it cannot be overemphasized that it is a thing including various kinds of deformation by within the limits of this invention.

[0006]

[Effect of the Invention] clear from the above explanation -- as -- the connector 1 for SMT correspondence substrate clip lump type IC memory card of this invention -- the thing of 1. former -- comparing -- a terminal -- short -- a conductor -- resistance is a low and there are few current losses

2. Since the terminal is short, the error of bending of the soldering section decreases and the flat precision of the soldering section can be expected.
3. Since it is a clip lump mounting type using spring displacement, it can respond also to the board thickness error of a substrate flexibly.
4. Since the thickness (height) of a connector can distribute in the vertical direction of a substrate, the mounting top low back is possible.
5. being unnecessary in fixed metallic ornaments to the levelness of a terminal being required on a substrate and needing fixed metallic ornaments conventionally, -- carrying out -- a spring -- since it is eased with a variation rate, don't need such a precision
6. It is easy to carry out press working of sheet metal, and manufacture is easy.

Since the outstanding effect to say can be done so, a great thing has the industrial value.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] A (b) is the perspective diagram of the connector 1 for SMT

correspondence substrate clip lump type IC memory card which is the example of this invention and put the substrate 3 by the up-and-down connector 2. A (b) is the cross-section explanatory drawing.

[Drawing 2] The perspective diagram before inserting the IC memory card 6 which becomes a connector 2 from three types in the example of this invention.

[Drawing 3] A (b) is the cross section of the connector for IC memory card carried on the conventional substrate which is the first conventional example and has arranged terminal area 4 of connector 2' ' in back 2 train on substrate 3'. A (b) is the cross section of the connector for IC memory card carried on the conventional substrate which is the second conventional example and has arranged terminal area 4 of connector 2' ' in front 1 train and back 1 train on substrate 3'.

[Description of Notations]

1 Connector for SMT Correspondence Substrate Clip Lump Type IC Memory Card of this Invention

2 Connector

3 Substrate

4 Terminal Area

5 Eject Button

6 Housing

7 IC Memory Card

1' Connector for IC memory card carried on the conventional substrate

2' Connector

3' Substrate

4' Terminal area

[Translation done.]

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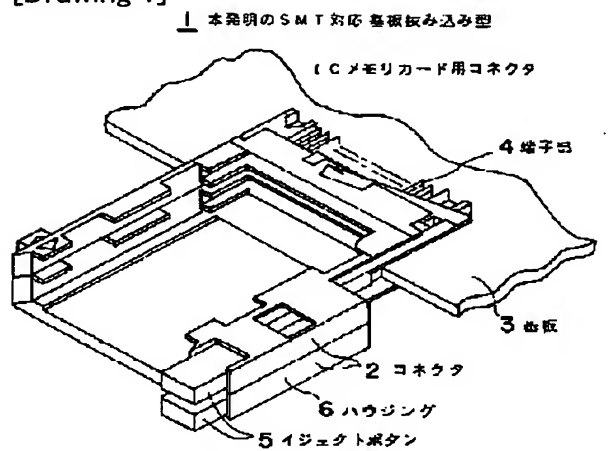
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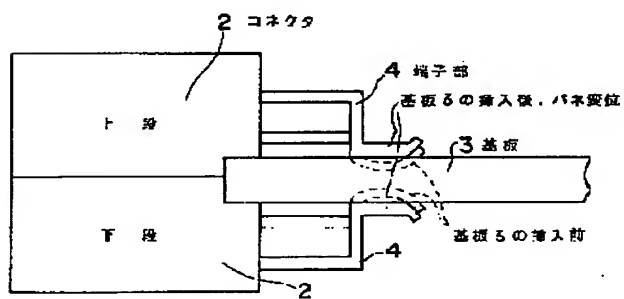
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DRAWINGS

[Drawing 1]

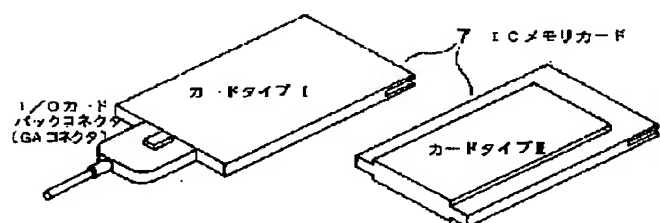
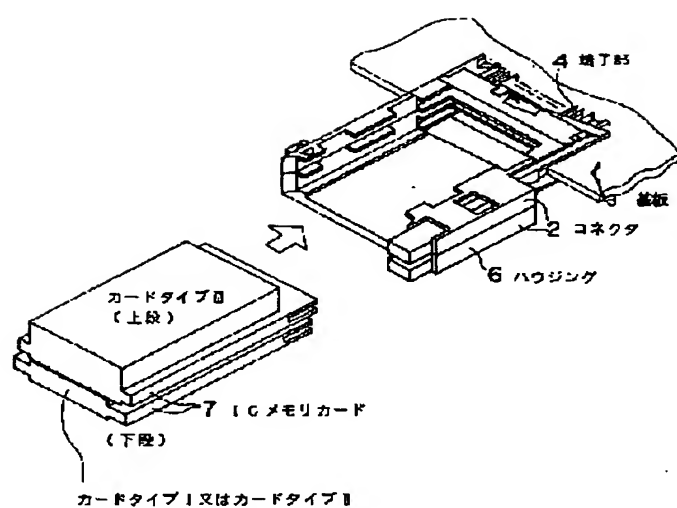


(イ) 本発明の実施例で、基板3を上下のコネクタ2で挟み込んだSMT対応基板組み込み型ICメモリカード用コネクタ1の斜視図。



(ロ) その断面説明図。

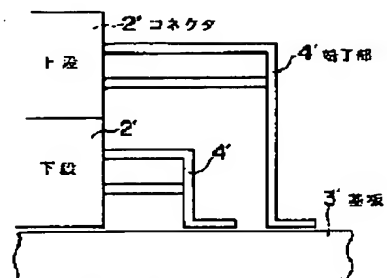
[Drawing 2]



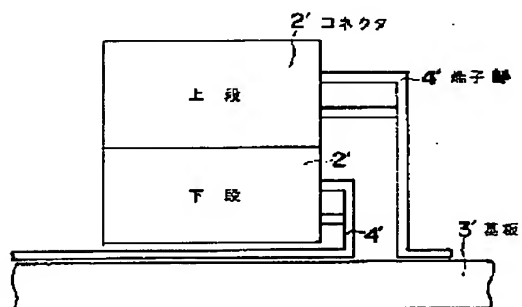
本発明の実施例で、コネクタ2にもタイプからなるICメモリカード7を挿入する前の状態図。

[Drawing 3]

1' 従来の基板上に搭載した IC メモリカード用コネクタ



(イ) 従来の第一実施例で、基板 3' 上にコネクタ 2' の端子部 4' を後方 2 列に配置した従来の基板上に搭載した IC メモリカード用コネクタの断面図。



(ロ) 従来の第二実施例で、基板 3' 上にコネクタ 2' の端子部 4' を前方 1 列、後方 1 列に配置した従来の基板上に搭載した IC メモリカード用コネクタの断面図。

[Translation done.]

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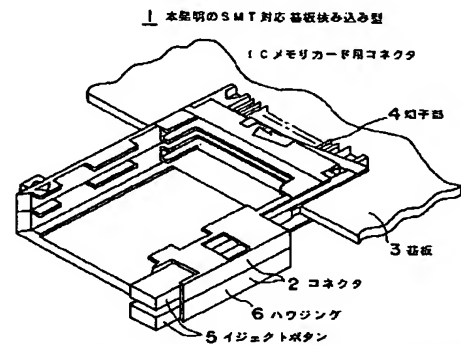
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(54) 【発明の名称】 SMT対応基板挟み込み型 I Cメモ리카ード用コネクタ

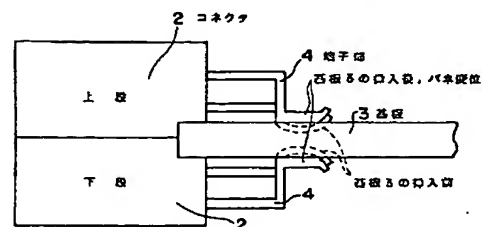
(57) 【要約】

【目的】 日本の J E I D A (日本電子工業振興協会) と米国の P C M C I A (P C Memory Card International Association) が協議して規格化し、その規格に準拠した P C カード用コネクタで、端子部が短くて済むためプレス加工が容易で、電流ロスが少なく、はんだ実装が容易で、実装高さが低背な S M T 対応基板挟み込み型 I Cメモ리카ード用コネクタ 1 の提供。

【構成】 基板 3 を上下対向する 2 段重ね (一体でも可) のコネクタ 2 で挟み込みかつ前記上下コネクタ 2 にバネ弾性を有する端子部 4 を設け、前記端子部 4 で基板 3 にはんだ付け実装を行うことを特徴とする S M T 対応基板挟み込み型 I Cメモ리카ード用コネクタ 1。



(1) 本発明の実施例で、基板 3 を上下のコネクタ 2 で挟み込んだ S M T 対応基板挟み込み型 I Cメモ리카ード用コネクタ 1 の斜視図。



(2) その断面説明図。

【特許請求の範囲】

【請求項1】 基板を上下対向する2段重ね又は一体化したコネクタで挟み込みかつ前記上下コネクタにバネ弾性を有する端子部を設け、前記端子部で基板にはんだ付け実装を行うことを特徴とするSMT対応基板挟み込み型ICメモリカード用コネクタ。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、日本のJEIDA（日本電子工業振興協会）と米国のPCMCIA（PC Memory Card International Association）が協議して規格化し、その規格に準拠したPCカード用コネクタで、SMT対応基板挟み込み型ICメモリカード用コネクタ1に関する。

【0002】

【従来技術とその課題】近年、パソコン、周辺端末機器、各種OA機器等の電子機器は小型化・軽量化が著しく、フロッピーデスクやハードデスクに代わり携帯性に優れた情報メディアとしてPCカードがもてはやされてきている。始めに、図3（イ）は、従来の第一実施例で、基板3'上にコネクタ2'の端子部4'を後方2列に配置した従来の基板上に搭載したICメモリカード用コネクタの断面図である。図から明らかなように、下段、上段のはんだ付けが終わった後では下段側端子部のはんだ付けを修正することが出来ないという欠点があった。次に、図3（ロ）は、従来の第二実施例で、基板3'上にコネクタ2'の端子部4'を前方1列、後方1列に配置した従来の基板上に搭載したICメモリカード用コネクタの断面図である。この場合は、下段側端子部の端子の長さが非常に長くなってしまい、微弱電流に対して電気抵抗が大きくなってしまえばかりでなく、曲げ工程が複雑であるという欠点があった。しかも、従来のものは、基板上に上・下段のコネクタを段重ねして搭載する方式であるので、どうしても実装高さが高くなってしまいうという欠点もあった。

【0003】本発明は、これらの欠点を解決する為に、鋭意検討した結果、端子部が短くて済むためプレス加工が容易で、電流ロスが少なく、はんだ実装が容易で、実装高さが低背なSMT対応基板挟み込み型ICメモリカード用コネクタ1の提供を目的としてなされたもので、その要旨とするところは、基板3を上下対向する2段重ね（一体でも可）のコネクタ2で挟み込みかつ前記上下コネクタ2にバネ弾性を有する端子部4を設け、前記端子部4で基板3にはんだ付け実装を行うことを特徴とするSMT対応基板挟み込み型ICメモリカード用コネクタ1である。

【0004】

【実施例】以下、本発明のSMT対応基板挟み込み型ICメモリカード用コネクタ1の実施例を添付図面を参照して詳細に説明する。図1（イ）は、本発明の実施例

で、基板3を上下のコネクタ2で挟み込んだSMT対応基板挟み込み型ICメモリカード用コネクタ1の斜視図で、図1（ロ）は、その断面説明図である。図から明らかなように、基板3を上下対向する2段重ね（一体でも可）のコネクタ2で挟み込みかつ前記上下コネクタ2にバネ弾性を有する端子部4を設け、前記端子部4で基板3にはんだ付け実装を行うことを特徴とするSMT対応基板挟み込み型ICメモリカード用コネクタ1である。本発明の端子部4の接点部は、銅合金にニッケルで下地し、金メッキを施したものを使用し、ハウジング6は、通常の熱可塑性樹脂を使用した。はんだ付け実装の具体的方法としては、遠赤外、赤外、ペーパー等の通常の方法で行えば良い。図2は、本発明の実施例で、コネクタ2に3タイプからなるICメモリカード7を挿入する前の斜視図である。具体的使用例をあげると、規格には68ピンのICメモリカードで、3タイプがあり、例えば上段にカードタイプIIIを使用した場合には、下段も同じ向きにしてカードタイプI又はカードタイプIIを使用すれば良い。このような構造のため、本発明のSMT対応基板挟み込み型ICメモリカード用コネクタ1と従来の基板上に搭載したICメモリカード用コネクタ1'の場合で実装高さを比較した結果、従来のものに比べて約1/2に低くすることが可能となる。

【0005】本発明の実施例では、SMT対応基板挟み込み型ICメモリカード用コネクタ1を代表例にとり説明してきたがこれに限るものではなく、例えば、コネクタ2を2段重ねした場合を図示しているが、2段重ねでは無く一体化したコネクタにしても構わない。又、端子部4も基板に対して垂直又は直角にした場合を示しているが、これに限らず曲線状に形成したもので構わない。このように上記に上げた実施例に限らず、幅広い応用も可能で、本発明の範囲内で各種の変形を含むものであることはいうまでもない。

【0006】

【発明の効果】以上の説明から明らかなように、本発明のSMT対応基板挟み込み型ICメモリカード用コネクタ1は、

1. 従来のものに比べて、端子が短く導体抵抗が低いので、電流ロスが少ない。
 2. 端子が短いため、はんだ付け部の曲げの誤差が少なくなり、はんだ付け部の平坦精度が期待出来る。
 3. バネ変位を利用した挟み込み実装タイプなので、基板の板厚誤差にも柔軟に対応出来る。
 4. コネクタの厚み（高さ）が、基板の上下方向に振り分けられるため、実装上低背が可能である。
 5. 従来は基板上で端子の水平度が要求され固定金具を必要とするのに対し、固定金具を不要とし、バネ変位で緩和されるのでそれ程の精度を必要としない。
 6. プレス加工がし易く、製造が容易である。
- という優れた効果を奏することが出来るので、その工業

的価値は大いなるものがある。

【図面の簡単な説明】

【図1】(イ)は、本発明の実施例で、基板3を上下のコネクタ2で挟み込んだSMT対応基板挟み込み型ICメモリカード用コネクタ1の斜視図。(ロ)は、その断面説明図。

【図2】本発明の実施例で、コネクタ2に3タイプからなるICメモリカード6を挿入する前の斜視図。

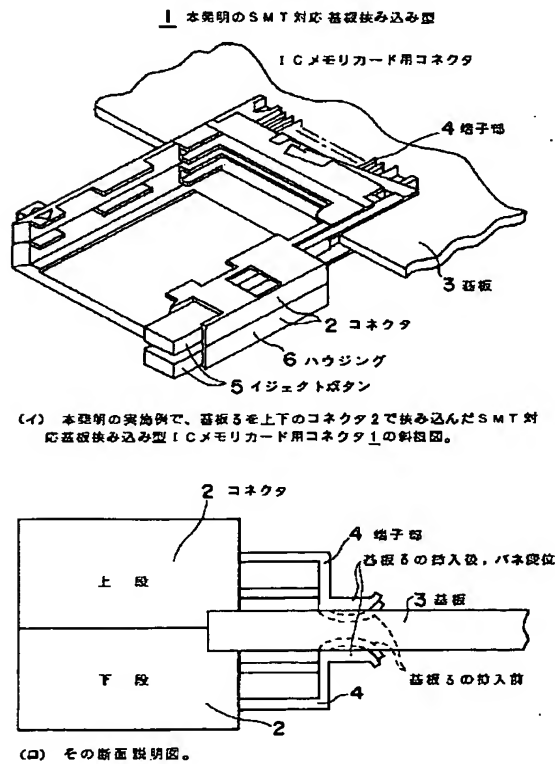
【図3】(イ)は、従来の第一実施例で、基板3'上にコネクタ2'の端子部4'を後方2列に配置した従来の基板の上に搭載したICメモリカード用コネクタの断面図。(ロ)は、従来の第二実施例で、基板3'上にコネクタ2'の端子部4'を前方1列、後方1列に配置した従来の基板の上に搭載したICメモリカード用コネクタの断面図。

*【符号の説明】

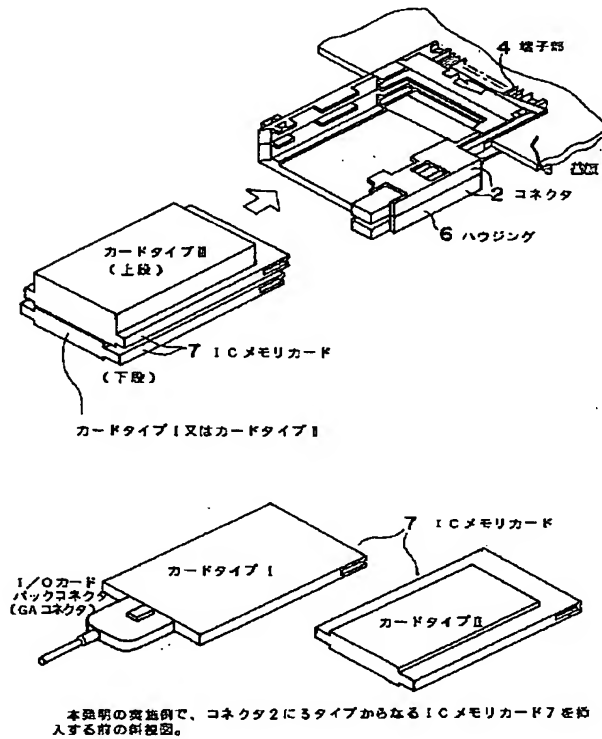
- 1 本発明のSMT対応基板挟み込み型ICメモリカード用コネクタ
- 2 コネクタ
- 3 基板
- 4 端子部
- 5 イジェクトボタン
- 6 ハウジング
- 7 ICメモリカード
- 10 1' 従来の基板の上に搭載したICメモリカード用コネクタ
- 2' コネクタ
- 3' 基板
- 4' 端子部

*

【図1】

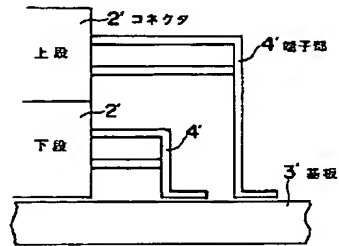


【図2】

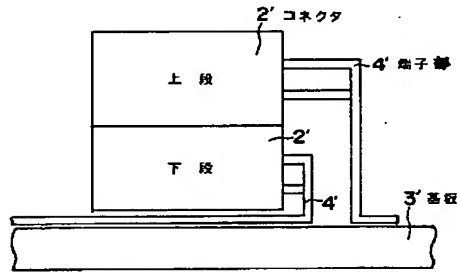


【図 3】

1' 従来の基板 3' 上に搭載した IC メモリカード用コネクタ



(イ) 従来の第一実施例で、基板 3' 上にコネクタ 2' の端子部 4' を後方 2 列に配置した従来の基板 3' 上に搭載した IC メモリカード用コネクタの断面図。



(ロ) 従来の第二実施例で、基板 3' 上にコネクタ 2' の端子部 4' を前方 1 列、後方 1 列に配置した従来の基板 3' 上に搭載した IC メモリカード用コネクタの断面図。